

## FIGURE 1

Murine Antibody 3B9 Light Chain  
Native Signal Sequence and Variable RegionNucleotide Sequence SEQ ID NO:1  
Amino Acid Sequence SEQ ID NO:2

ATG GAG ACA GAC ACA ATC CTG CTA TGG GTG CTG CTG CTC	39
Met Glu Thr Asp Thr Ile Leu Leu Trp Val Leu Leu Leu	
1 5 10	
TGG GTT CCA GGC TCC ACT GGT GAC ATT GTG CTG ACC CAA	78
Trp Val Pro Gly Ser Thr Gly Asp Ile Val Leu Thr Gln	
15 20 25	
TCT CCA GCT TCT TTG GCT GTG TCT CTA GGG CAG AGG GCC	117
Ser Pro Ala Ser Leu Ala Val Ser Leu Gly Gln Arg Ala	
30 35	
ACC ATC TCC TGC AAG GCC AGC CAA AGT GTT GAT TAT GAT	156
Thr Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp	
40 45 50	
GGT GAT AGT TAT ATG AAC TGG TAC CAA CAG AAA CCA GGA	195
Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly	
55 60 65	
CAG CCA CCC AAA CTC CTC ATC TAT GCT GCA TCC AAT CTA	234
Gln Pro Pro Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu	
70 75	
GAA TCT GGG ATC CCA GCC AGG TTT AGT GGC AGT GGG TCT	273
Glu Ser Gly Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser	
80 85 90	
GGG ACA GAC TTC ACC CTC AAC ATC CAT CCT GTG GAG GAG	312
Gly Thr Asp Phe Thr Leu Asn Ile His Pro Val Glu Glu	
95 100	
GAG GAT GCT GCA ACC TAT TAC TGT CAG CAA AGT AAT GAG	351
Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Glu	
105 110 115	
GAT CCT CCG ACG TTC GGT GGA GGC ACC AAG CTG GAA ATC	390
Asp Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile	
120 125 130	
AAA CGG	396
Lys Arg	

Figure 2

Murine Antibody 3B9 Heavy Chain  
Native Signal Sequence and Variable RegionNucleotide Sequence SEQ ID NO: 3  
Amino Acid Sequence SEQ ID NO: 4

GAATTCTGGCGG	CCGCTATGCA	GGGACAATCA	GCAGCAGCAA	40
TGAGGAAGTA AGCCTGTGCA GAT ATG AAC AGG CTT ACT TCC				81
Met Asn Arg Leu Thr Ser				
1			5	
TCA TTG CTG CTG CTG ATT GTC CCT GCA TAT GTC CTG TCC				120
Ser Leu Leu Leu Ile Val Pro Ala Tyr Val Leu Ser				
10		15		
CAG GTT ACT CTG AAA GAG TCT GGC CCT GGG ATA TTG CAG				159
Gln Val Thr Leu Lys Glu Ser Gly Pro Gly Ile Leu Gln				
20	25		30	
CCC TCC CAG ACC CTC AGT CTG ACT TGT TCT TTC TCT GGG				198
Pro Ser Gln Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly				
35	40		45	
TTT TCA CTG AGC ACT TCT GGT ATG GGT GTG AGC TGG ATT				237
Phe Ser Leu Ser <u>Thr Ser Gly</u> Met Gly Val Ser Trp Ile				
50		55		
CGT CAG CCT TCA GGA AAG GGT CTG GAG TGG CTG GCA CAC				276
Arg Gln Pro Ser Gly Lys Gly Leu Glu Trp Leu Ala <u>His</u>				
60	65		70	
ATT TAC TGG GAT GAT GAC AAG CGC TAT AAC CCA TCC CTG				315
<u>Ile Tyr Trp Asp Asp Lys Arg Tyr Asn Pro Ser Leu</u>				
75	80			
AAG AGC CGG CTC ACA ATC TCC AAG GAT ACC TCC AGC AAC				354
<u>Lys Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Ser Asn</u>				
85	90		95	
CAG GTA TTC CTC AAG ATC ACC AGT GTG GAC ACT GCA GAT				393
Gln Val Phe Leu Lys Ile Thr Ser Val Asp Thr Ala Asp				
100	105		110	
ACT GCC ACA TAC TAC TGT GCT CGA AGA GAG ACT GTG TTC				432
<u>Thr Ala Thr Tyr Tyr Cys Ala Arg Arg Glu Thr Val Phe</u>				
115		120		

APPROVED	U.G. FIG.
CLASS	SUBCLASS
BY	
DRAFTSMAN	

Figure 2 (con't)

TAC	TGG	TAC	TTC	GAT	GTC	TGG	GGC	GCA	GGG	ACC	ACG	GTC	471
<u>Tyr</u>	<u>Trp</u>	<u>Tyr</u>	<u>Phe</u>	<u>Asp</u>	<u>Val</u>	<u>Trp</u>	<u>Gly</u>	<u>Ala</u>	<u>Gly</u>	<u>Thr</u>	<u>Thr</u>	<u>Val</u>	
125						130						135	
ACC	GTC	TCC	TCA										483
Thr	Val	Ser	Ser										
													140

APPLICANT	U.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

## FIGURE 3

Human/Murine 3B9 Chimeric Antibody Heavy Chain  
Signal Sequence and Variable RegionNucleotide Sequence SEQ ID NO: 9  
Amino Acid Sequence SEQ ID NO:10

APPLICANT	U. S. FIG.
BY	CLASS
	SUBCLASS
	DRAFTSMAN

ATG GTG TTG CAG ACC CAG GTC TTC ATT TCT CTG TTG CTC      39  
Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu  
1                    5    10.

TGG ATC TCT GGT GCC TAC GGG CAG GTT ACC CTG AAA GAG      78  
Trp Ile Ser Gly Ala Tyr Gly Gln Val Thr Leu Lys Glu  
15                    20    25

TCT GGC CCT GGG ATA TTG CAG CCC TCC CAG ACC CTC AGT      117  
Ser Gly Pro Gly Ile Leu Gln Pro Ser Gln Thr Leu Ser  
30                    35

CTG ACT TGT TCT TTC TCT GGG TTT TCA CTG AGC ACT TCT      156  
Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Ser Thr Ser  
40                    45    50

GGT ATG GGT GTG AGC TGG ATT CGT CAG CCT TCA GGA AAG      195  
Gly Met Gly Val Ser Trp Ile Arg Gln Pro Ser Gly Lys  
55                    60    65

GGT CTG GAG TGG CTG GCA CAC ATT TAC TGG GAT GAT GAC      234  
Gly Leu Glu Trp Leu Ala His Ile Tyr Trp Asp Asp Asp  
70                    75

AAG CGC TAT AAC CCA TCC CTG AAG AGC CGG CTC ACA ATC      273  
Lys Arg Tyr Asn Pro Ser Leu Lys Ser Arg Leu Thr Ile  
80                    85    90

TCC AAG GAT ACC TCC AGC AAC CAG GTA TTC CTC AAG ATC      312  
Ser Lys Asp Thr Ser Ser Asn Gln Val Phe Leu Lys Ile  
95                    100

ACC AGT GTG GAC ACT GCA GAT ACT GCC ACA TAC TAC TGT      351  
Thr Ser Val Asp Thr Ala Asp Thr Ala Thr Tyr Tyr Cys  
105                    110    115

GCT CGA AGA GAG ACT GTG TTC TAC TGG TAC TTC GAT GTC      390  
Ala Arg Arg Glu Thr Val Phe Tyr Trp Tyr Phe Asp Val  
120                    125    130

TGG GGC GCA GGG ACC ACG GTC ACC GTC TCC TCA      423  
Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser  
135                    140

## FIGURE 4

Humanized 3B9 Antibody Heavy Chain  
Signal Sequence and Variable Region

Nucleotide Sequence SEQ ID NO: 11

Amino Acid Sequence SEQ ID NO: 12

ATG	GTG	TTG	CAG	ACC	CAG	GTC	TTC	ATT	TCT	CTG	TTG	CTC	39
Met	Val	Leu	Gln	Thr	Gln	Val	Phe	Ile	Ser	Leu	Leu	Leu	
1				5					10				
TGG	ATC	TCT	GGT	GCC	TAC	GGG	CAG	GTT	ACC	CTG	CGT	GAA	78
Trp	Ile	Ser	Gly	Ala	Tyr	Gly	Gln	Val	Thr	Leu	Arg	Glu	
15					20						25		
TCC	GGT	CCG	GCA	CTA	GTT	AAA	CCG	ACC	CAG	ACC	CTG	ACG	117
Ser	Gly	Pro	Ala	Leu	Val	Lys	Pro	Thr	Gln	Thr	Leu	Thr	
				30				35					
TTA	ACC	TGC	ACC	TTC	TCC	GGT	TTC	TCC	CTG	TCG	ACC	TCC	156
Leu	Thr	Cys	Thr	Phe	Ser	Gly	Phe	Ser	Leu	Ser	<u>Thr</u>	<u>Ser</u>	
40				45					50				
GGT	ATG	GGT	GTT	TCC	TGG	ATC	CGT	CAG	CCG	CCG	GGT	AAA	195
<u>Gly</u>	<u>Met</u>	<u>Gly</u>	<u>Val</u>	<u>Ser</u>	<u>Trp</u>	<u>Ile</u>	<u>Arg</u>	<u>Gln</u>	<u>Pro</u>	<u>Pro</u>	<u>Gly</u>	<u>Lys</u>	
55					60						65		
GGT	CTA	GAA	TGG	CTG	GCT	CAC	ATC	TAC	TGG	GAC	GAC	GAC	234
Gly	Leu	Glu	Trp	Leu	Ala	<u>His</u>	<u>Ile</u>	<u>Tyr</u>	<u>Trp</u>	<u>Asp</u>	<u>Asp</u>	<u>Asp</u>	
				70				75					
AAA	CGT	TAC	AAC	CCG	AGC	CTG	AAA	TCC	CGT	CTG	ACC	ATA	273
<u>Lys</u>	<u>Arg</u>	<u>Tyr</u>	<u>Asn</u>	<u>Pro</u>	<u>Ser</u>	<u>Leu</u>	<u>Lys</u>	<u>Ser</u>	<u>Arg</u>	<u>Leu</u>	<u>Thr</u>	<u>Ile</u>	
80				85					90				
TCC	AAA	GAC	ACC	TCC	CGT	AAC	CAG	GTT	GTT	CTG	ACC	ATG	312
Ser	Lys	Asp	Thr	Ser	Arg	Asn	Gln	Val	Val	Leu	Thr	Met	
95					100								
ACT	AAC	ATG	GAC	CCG	GTT	GAC	ACC	GCT	TAC	TAC	TGC	351	
Thr	Asn	Met	Asp	Pro	Val	Asp	Thr	Ala	Thr	Tyr	Tyr	Cys	
105				110					115				
GCT	CGA	CGC	GAA	ACC	GTT	TTC	TAC	TGG	TAC	TTC	GAC	GTT	390
Ala	Arg	Arg	Glu	Thr	Val	Phe	Tyr	Trp	Tyr	Phe	Asp	Val	
120					125					130			
TGG	GGT	CGT	GGT	ACC	CCA	GTT	ACC	GTG	AGC	TCA		423	
Trp	Gly	Arg	Gly	Thr	Pro	Val	Thr	Val	Ser	Ser			
135								140					

## FIGURE 5

Humanized 3B9 Antibody Light Chain  
Signal Sequence and Variable RegionNucleotide Sequence SEQ ID NO: 13  
Amino Acid Sequence SEQ ID NO: 14

ATG	GGA	TGG	AGC	TGT	ATC	ATC	CTC	TTC	TTG	GTA	GCA	ACA	39
Met	Gly	Trp	Ser	Cys	Ile	Ile	Leu	Phe	Leu	Val	Ala	Thr	
1	5								10				
GCT	ACA	GGT	GTC	CAC	TCC	GAT	ATC	GTG	ATG	ACC	CAG	TCT	78
Ala	Thr	Gly	Val	His	Ser	Asp	Ile	Val	Met	Thr	Gln	Ser	
15	20								25				
CCA	GAC	TCG	CTA	GCT	GTG	TCT	CTG	GGC	GAG	AGG	GCC	ACC	117
Pro	Asp	Ser	Leu	Ala	Val	Ser	Leu	Gly	Glu	Arg	Ala	Thr	
30	35												
ATC	AAC	TGC	AAG	GCC	TCC	CAA	AGT	GTT	GAT	TAT	GAT	GGT	156
Ile	Asn	Cys	<u>Lys</u>	Ala	Ser	Gln	Ser	Val	Asp	Tyr	Asp	Gly	
40	45								50				
GAT	AGT	TAT	ATG	AAC	TGG	TAT	CAG	CAG	AAA	CCC	GGG	CAG	195
<u>Asp</u>	<u>Ser</u>	<u>Tyr</u>	<u>Met</u>	<u>Asn</u>	<u>Trp</u>	<u>Tyr</u>	<u>Gln</u>	<u>Gln</u>	<u>Lys</u>	<u>Pro</u>	<u>Gly</u>	<u>Gln</u>	
55	60								65				
CCT	CCT	AAG	TTG	CTC	ATT	TAC	GCT	GCA	TCC	AAT	CTA	GAA	234
Pro	Pro	Lys	Leu	Leu	Ile	Tyr	<u>Ala</u>	<u>Ala</u>	<u>Ser</u>	<u>Asn</u>	<u>Leu</u>	<u>Glu</u>	
70	75												
TCT	GGG	GTA	CCT	GAC	CGA	TTC	AGT	GGC	AGC	GGG	TCT	GGG	273
<u>Ser</u>	<u>Gly</u>	<u>Val</u>	<u>Pro</u>	<u>Asp</u>	<u>Arg</u>	<u>Phe</u>	<u>Ser</u>	<u>Gly</u>	<u>Ser</u>	<u>Gly</u>	<u>Ser</u>	<u>Gly</u>	
80	85								90				
ACA	GAT	TTC	ACT	CTC	ACC	ATC	AGC	AGC	CTG	CAG	GCT	GAA	312
Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Ala	Glu	
95	100												
GAT	GTG	GCA	GTA	TAC	TAC	TGT	CAG	CAA	AGT	AAT	GAG	GAT	351
Asp	Val	Ala	Val	Tyr	Tyr	Cys	<u>Gln</u>	<u>Gln</u>	<u>Ser</u>	<u>Asn</u>	<u>Glu</u>	<u>Asp</u>	
105	110								115				
CCT	CCG	AGG	TTC	GGC	GGG	ACC	AAG	GTG	GAG	ATC	AAA	390	
<u>Pro</u>	<u>Pro</u>	<u>Arg</u>	<u>Phe</u>	<u>Gly</u>	<u>Gly</u>	<u>Gly</u>	<u>Thr</u>	<u>Lys</u>	<u>Val</u>	<u>Glu</u>	<u>Ile</u>	<u>Lys</u>	
120	125								130				
CGT													393
Arg													

## FIGURE 6A

Signal Sequence  
 Nucleotide SEQ ID NO:5  
 Amino Acid SEQ ID NO:6

ATG GTG TTG CAG ACC CAG GTC TTC ATT TCT CTG TTG CTC 39  
 Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu  
 1 5 10

TGG ATC TCT GGT GCC TAC  
 Trp Ile Ser Gly Ala Tyr  
 15

APPROVED	U.G. FIG.
CLASS	SUBCLASS
BY	DRAFTSMAN

## FIGURE 6B

Signal Sequence  
 Nucleotide SEQ ID NO:7  
 Amino Acid SEQ ID NO:8

ATG GGA TGG AGC TGT ATC ATC CTC TTC TTG GTA GCA ACA 39  
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr  
 1 5 10

GCT ACA GGT GTC CAC TCC GAT ATC GTG ATG ACC CAG TCT 78  
 Ala Thr Gly Val His Ser Asp  
 15 20

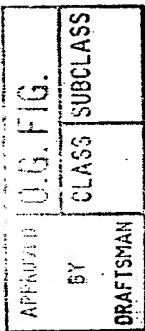
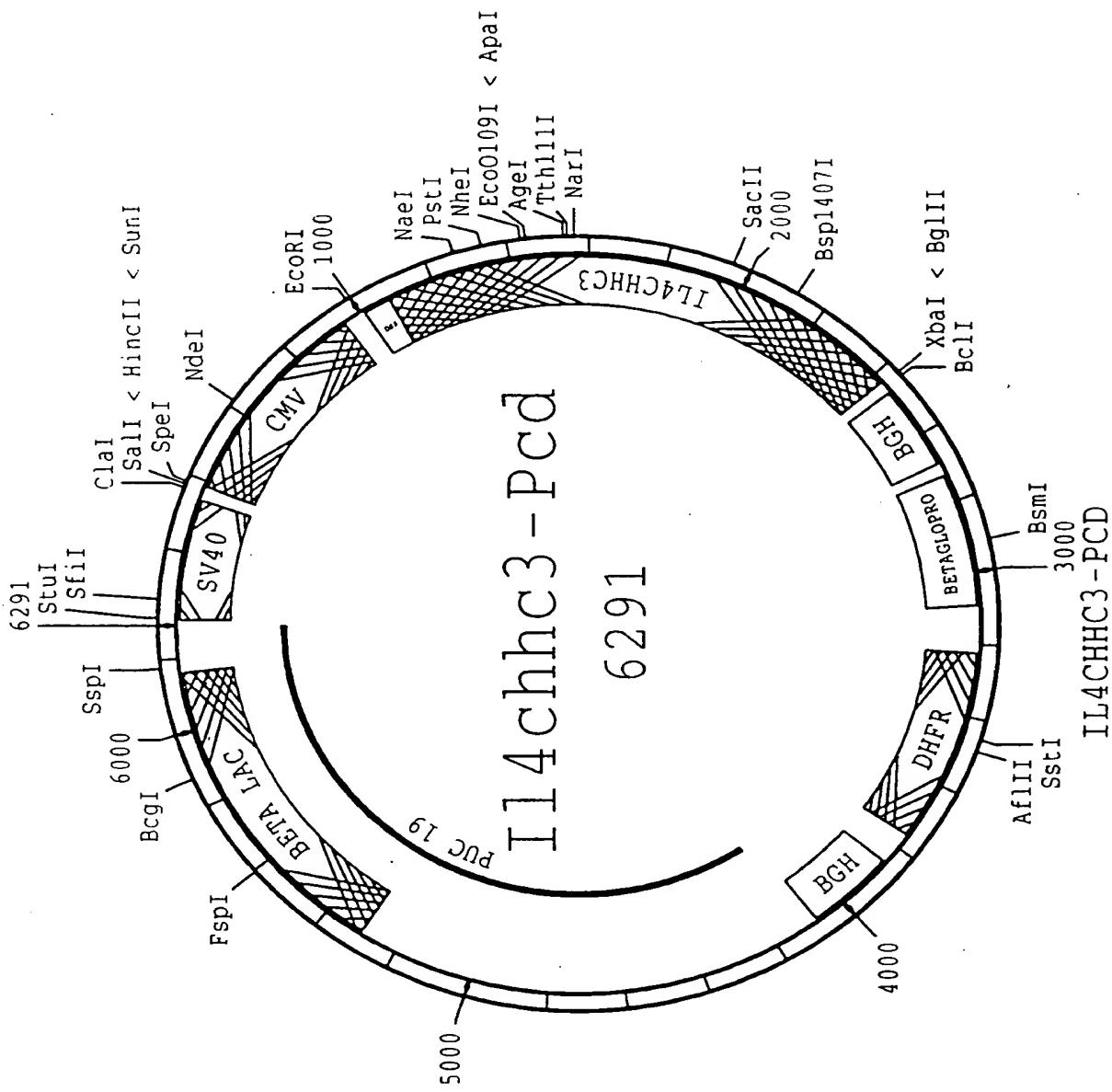


FIGURE 7



APPLICATION	O. G. FIG.	
BY	CLASS	SUBCLASS
	DRAFTSMAN	

FIGURE 8

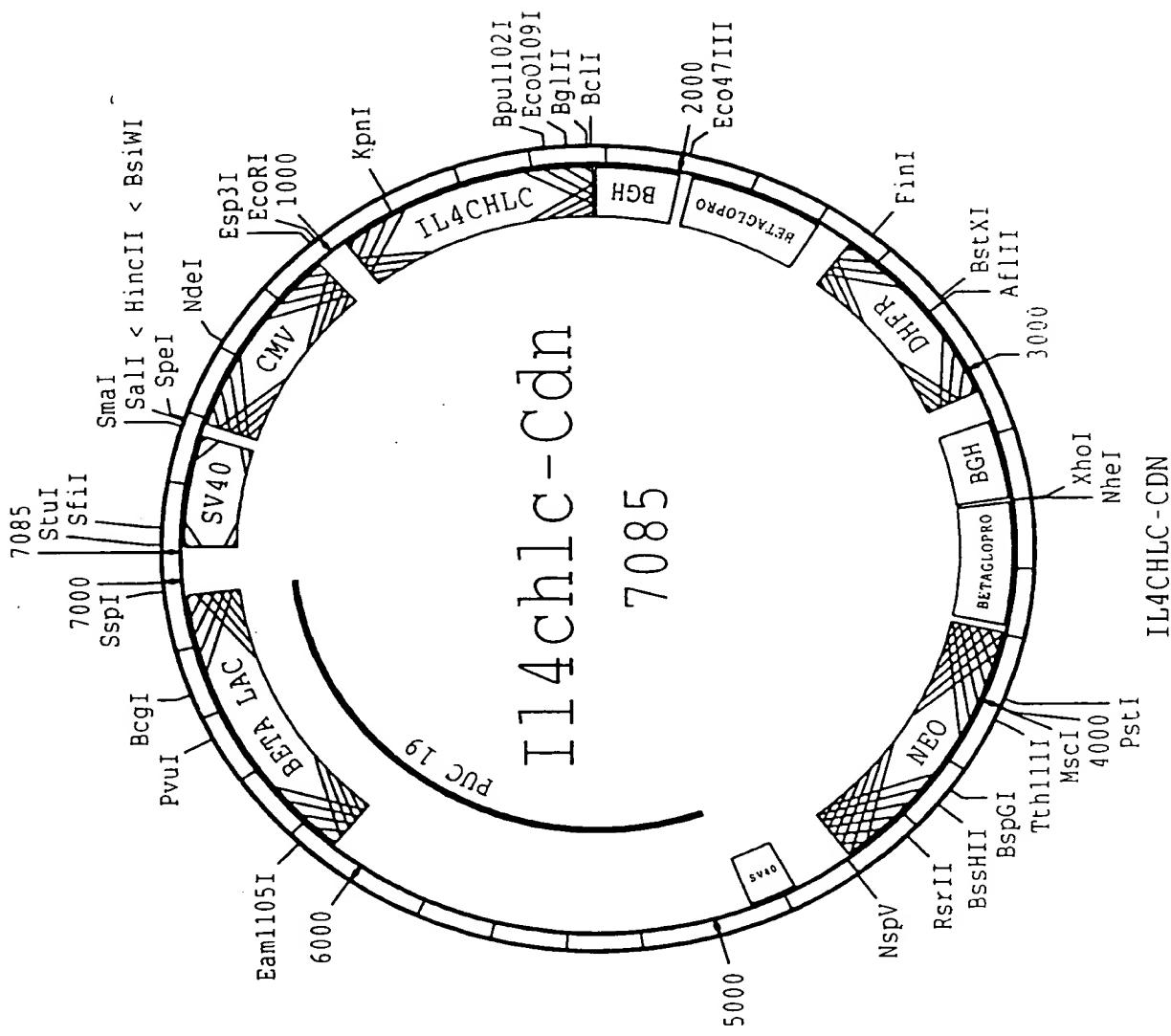
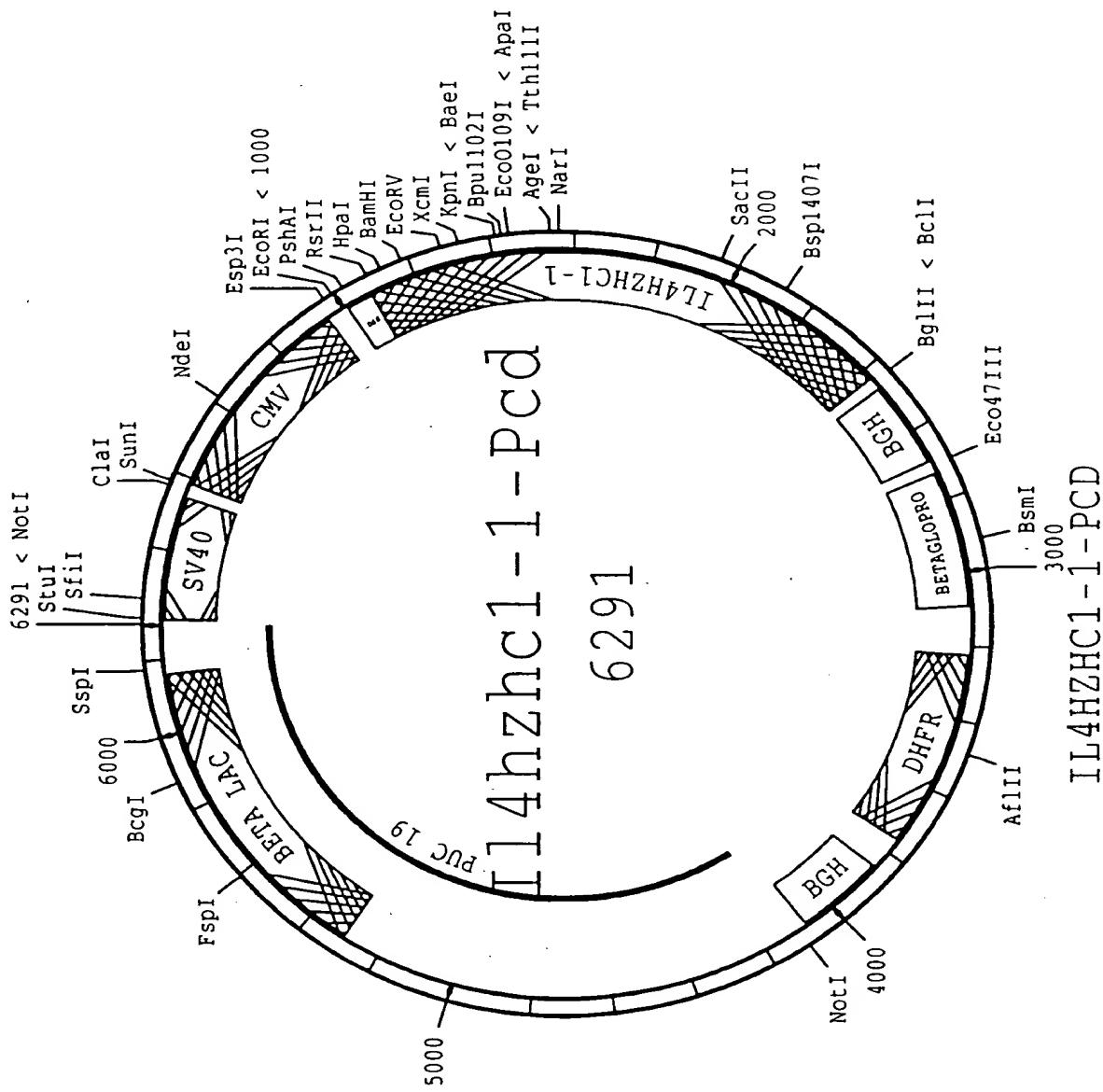


FIGURE 9

APPLICANT	U.G. FIG.
BY	CLASS
DRAFTER	SUBCLASS



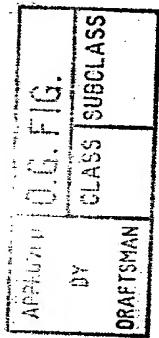


FIGURE 10

